

Amendments to the Claims:

Please amend the claims as shown in the following listing of claims, which will replace all prior versions and listings of claims in the application.

1-37. (Canceled)

38. (New) A hyperimmune serum-reactive antigen comprising an amino acid sequence from any of SEQ ID NOs: 179-356 or fragments thereof.

39. (New) The hyperimmune serum-reactive antigen or fragment of claim 38, further defined as a peptide comprising an amino acid sequence described in the “predicted immunogenic aa” and/or “location of identified immunogenic region” of Table 1 or of a serum reactive epitope of Table 3.

40. (New) The hyperimmune serum reactive antigen or fragment of claim 38, further defined as comprising an amino acid sequence of amino acids: 63-91, 95-101, 110-116, 134-148, 150-156, 158-164, 188-193, 197-209, 226-241, 247-254, 291-297, 312-319, 338-346, 351-358, 366-378, 404-410, 420-438, 448-454, 465-473, 482-488, 490-498, 503-510, 512-519, 531-543, 547-554, 568-575, 589-604, 610-631 and 239-308 of SEQ ID NO:179; 16-29, 35-47, 50-68, 70-79, 91-101, 143-149, 158-163, 185-191, 196-206, 215-224, 230-237, 244-251, 258-278, 290-311, 319-325, 338-351, 365-385, 396-429, 445-454, 458-466, 491-499, 501-521, 17-79 and 218-233 of SEQ ID NO:180; 4-10, 16-41, 46-66, 77-84, 91-97, 102-118, 125-144, 187-200, 202-214, 245-253, 255-261, 286-295, 300-330, 335-342, 350-361, 363-381, 385-392, 396-416, 435-450 and 460-470 of SEQ ID NO:181; 11-19, 27-48, 52-59, 77-82, 84-107, 118-125, 127-154, 178-183, 192-209, 215-221, 286-295, 302-313, 350-357, 402-415, 417-431, 453-463, 465-493 and 313-331 of SEQ ID NO:182; 19-26, 30-43, 47-55, 63-68, 72-80, 97-104, 107-119, 129-146, 160-175, 194-216, 231-251, 254-260 and 26-43 of SEQ ID NO:183; 7-13, 29-37, 65-81, 110-120, 123-131, 135-152, 230-249, 254-260, 284-290, 292-299, 317-326, 329-336, 403-444, 452-458, 466-477, 490-498, 510-519, 541-550, 557-566 and 533-567 of SEQ ID NO:184; 5-47, 71-77, 79-86, 89-95, 120-126, 137-144, 176-181, 184-196, 202-208, 211-232, 236-282, 301-313, 317-325, 341-347, 353-384, 394-400, 412-433, 436-443 and 59-75 of SEQ ID NO:185; 4-18, 22-38, 59-69, 106-112, 116-130, 138-149, 156-170, 175-197, 200-214, 216-223, 233-244, 255-261, 266-276, 279-286, 325-333, 342-348, 366-399, 402-420, 429-441, 1-104 and 130-147 of SEQ ID NO:186; 50-58, 69-95, 97-113, 131-136, 157-163, 170-175, 188-212, 220-226, 254-259, 265-277, 283-289, 297-308,

311-318, 347-358, 360-369, 378-401, 416-421, 440-450, 454-462, 470-476, 493-502, 506-514, 536-567, 585-590, 598-607, 613-618, 653-659 and 35-46 of SEQ ID NO:187; 16-29, 32-60, 65-87, 89-123, 128-134, 137-158, 162-173, 178-196, 210-216, 218-228 and 206-225 of SEQ ID NO:188; 10-20, 26-35, 51-64, 86-91, 94-100, 113-122, 154-160, 185-191, 193-201, 211-217, 225-230, 237-246, 251-257, 298-304, 306-312, 316-328, 340-348, 357-389, 391-397, 415-421, 449-456, 458-471, 488-495, 502-511, 24-55 and 236-341 of SEQ ID NO:189; 5-22, 41-51, 87-93, 114-122, 127-136, 150-156, 158-166, 223-233, 245-263, 291-296, 9-126 and 127-285 of SEQ ID NO:190; 30-43, 46-56, 61-70, 72-83, 85-93, 103-113, 119-125, 151-166, 179-191, 212-218, 225-231, 236-243, 262-267, 291-307, 331-344, 349-355, 366-372, 380-386, 414-422, 428-447, 459-464, 469-478, 507-519, 525-544, 563-569, 576-590, 620-626, 633-643, 654-659, 665-671, 684-707, 717-723, 725-733, 747-779, 782-801 and 347-361 of SEQ ID NO:191; 4-12, 14-26, 37-80, 107-115, 133-139, 144-150, 154-165, 173-180, 191-199, 205-211, 221-231, 237-244, 254-284, 307-340, 342-353, 360-368, 370-380, 479-493, 495-503, 509-522, 525-536, 539-547, 554-560, 565-573, 578-583, 7-23 and 465-479 of SEQ ID NO:192; 4-17, 47-55, 76-83, 85-100, 104-112, 117-123, 126-135, 142-148, 156-167, 174-182, 267-273 and 258-283 of SEQ ID NO:193; 8-32, 36-42, 65-88, 102-108, 112-140, 147-163, 170-179, 183-193 and 117-124 of SEQ ID NO:194; 12-18, 45-50, 62-77, 82-95, 99-113, 115-123, 125-147, 155-177, 187-209, 211-223, 244-253, 259-270, 278-297, 302-307, 311-318, 329-334, 350-356, 359-365, 390-400, 402-413 and 333-350 of SEQ ID NO:195; 4-13, 15-27, 30-46, 53-58, 68-74, 82-95, 115-126, 134-139, 148-153, 159-176, 182-199, 201-217, 220-225, 227-235, 237-248, 253-266, 300-315, 322-336, 390-396, 412-426, 438-445, 448-459, 477-484, 502-508, 515-527, 529-537, 553-568, 643-651, 658-667, 690-703 and 376-400 of SEQ ID NO:196; 4-10, 24-32, 38-55, 59-67, 70-77, 80-87, 89-97, 123-129, 134-151, 166-172, 178-189, 191-216, 218-235, 245-259, 271-315, 326-339, 341-360 and 73-94 of SEQ ID NO:197; 13-25, 31-38, 43-57, 79-85, 92-99, 106-112, 117-128, 130-139, 146-158, 160-175, 194-204, 211-222, 225-232, 234-242, 263-270, 278-292, 299-320, 322-333 and 240-256 of SEQ ID NO:198; 4-17, 55-63, 66-101, 109-131, 135-143, 145-151, 155-161, 164-170, 177-185, 192-198, 213-218, 223-238, 246-256, 258-268, 273-283, 309-314, 322-328 and 195-221 of SEQ ID NO:199; 13-24, 31-39, 41-50, 63-69, 90-96, 104-109, 116-141, 148-153, 161-167, 173-178, 190-209, 253-258, 265-272, 279-289, 295-312, 317-343, 355-366, 376-389, 400-407, 430-451, 453-464, 466-472, 487-493, 499-505, 523-538, 554-559, 568-579, 584-601 and 344-363 of SEQ ID NO:200; 5-22, 30-36, 53-59, 61-70, 82-92, 99-106, 120-131, 135-148, 154-167, 169-183, 187-199, 204-212, 231-247 and 111-249 of SEQ ID NO:201; 17-36, 40-66, 71-144, 148-171, 173-191, 199-214, 220-252, 265-272, 278-288, 298-333, 342-385

and 287-307 of SEQ ID NO:202; 4-16, 22-28, 30-36, 42-48, 95-116, 154-162, 164-174, 239-252, 258-263, 273-285, 306-313, 323-333, 341-357, 363-369, 372-379, 395-401, 430-436, 438-453, 464-480, 33-44, 233-258 and 349-369 of SEQ ID NO:203; 4-21, 30-37, 46-53, 59-68, 80-92, 98-104, 118-143, 150-160, 165-185, 187-200, 204-211, 224-236, 241-246, 252-258, 271-280, 288-294, 311-320, 335-341 and 191-350 of SEQ ID NO:204; 4-16, 37-59, 64-70, 79-87, 93-102, 107-127, 143-165, 172-188, 197-204, 207-218, 221-227, 242-248, 258-277, 289-296, 298-316, 332-338, 344-365, 367-373, 375-382, 400-408, 415-425, 438-446 and 235-250 of SEQ ID NO:205; 4-37, 39-66, 84-98, 101-127, 140-149, 157-163, 166-172, 175-182, 184-193, 203-208, 215-232, 234-247, 250-299, 303-345 and 183-204 of SEQ ID NO:206; 10-20, 41-61, 73-87, 112-141, 176-192, 194-201, 205-222, 230-237, 257-264, 276-282, 284-310, 312-318, 330-337, 349-357 and 304-328 of SEQ ID NO:207; 4-31, 42-103, 105-113, 121-153, 160-181, 188-196, 210-226, 231-264, 272-287, 297-304, 328-336 and 304-318 of SEQ ID NO:208; 21-43, 46-52, 54-70, 72-79, 94-107, 133-141, 160-166, 217-253, 311-317, 359-365, 374-381, 390-395, 434-440, 488-494, 497-502, 511-522, 554-563, 565-574, 577-585, 591-598, 601-606, 617-625, 633-643, 658-664, 676-682, 694-702, 710-719, 754-760, 782-788, 802-808, 916-921, 942-948, 955-964, 973-979, 992-998, 1006-1011, 1016-1023, 1030-1038, 1046-1053, 1059-1066, 1088-1098, 1119-1126, 1129-1135, 1156-1171, 1173-1181, 1202-1210, 1255-1261, 1268-1280, 1295-1310, 1312-1320, 1375-1381, 1406-1417, 1450-1471, 1478-1492, 1498-1506, 1569-1578, 1603-1608, 1611-1624, 1648-1655, 1663-1670, 1680-1698, 1702-1707, 1713-1719, 1737-1742, 1747-1753, 1762-1769, 1771-1785, 1790-1804, 1811-1818, 1830-1836, 1838-1852, 1874-1886, 1893-1899, 1902-1909, 1942-1948, 1952-1962, 1980-1986, 2001-2017, 2020-2028, 2042-2050, 2052-2068, 2074-2079, 2083-2095, 2107-2113, 2147-2155, 2177-2194, 2203-2211, 2236-2241, 2251-2258, 2267-2274, 2285-2292, 2314-2328, 2330-2340, 2358-2365, 2390-2401, 2408-2418, 2432-2453, 2463-2476, 2486-2507, 2528-2537, 2540-2548, 2552-2558, 2568-2576, 2596-2601, 2610-2622, 2629-2638, 2653-2669, 2718-2727, 2749-2767, 2777-2784, 2789-2795, 2806-2815, 2817-2824, 2835-2843, 2847-2854, 2860-2881, 511-523, 612-630 and 1790-1803 of SEQ ID NO:209; 4-54, 61-68, 72-82, 86-93, 100-108, 115-130, 147-154, 187-194, 196-207, 224-229, 236-251, 275-287 and 96-109 of SEQ ID NO:210; 31-39, 62-69, 91-101, 158-172, 175-180, 186-193, 201-208, 210-223, 243-250, 273-286, 293-299, 319-325, 343-354, 356-365, 368-384, 414-435, 471-491, 512-518, 550-556, 567-581, 584-589, 633-639, 680-692, 697-708, 716-721, 747-754, 779-786, 810-816 and 366-503 of SEQ ID NO:211; 5-20, 22-48, 57-65, 96-101, 111-122, 130-145, 154-164, 170-181, 193-199, 201-216, 224-241, 244-262, 281-323, 342-351, 359-367, 369-396, 406-416, 424-433, 450-456, 485-491, 493-

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41. (New) The hyperimmune serum-reactive antigen or fragment of claim 38, comprising at least 6 contiguous amino acids of any of SEQ ID NOs: 179-356.

42. (New) The hyperimmune serum-reactive antigen or fragment of claim 38, comprising at least 8 contiguous amino acids of any of SEQ ID NOs: 179-356.

43. (New) The hyperimmune serum-reactive antigen or fragment of claim 38, comprising at least 10 contiguous amino acids of any of SEQ ID NOs: 179-356.

44. (New) The hyperimmune serum-reactive antigen or fragment of claim 38, further defined as directed against H. pylori.

45. (New) A pharmaceutical composition comprising a hyperimmune serum-reactive antigen or fragment of claim 38.

46. (New) The pharmaceutical composition of claim 45, wherein the hyperimmune serum-reactive antigen or fragment is directed against H. pylori.

47. (New) The pharmaceutical composition of claim 45, further defined as comprising at least two different hyperimmune serum-reactive antigens and/or fragments.

48. (New) The pharmaceutical composition of claim 47, wherein the at least two different hyperimmune serum-reactive antigens and/or fragments are both directed against *H. pylori*.

49. (New) The pharmaceutical composition of claim 45, further comprising an immunostimulatory substance.

50. (New) The pharmaceutical composition of claim 49, wherein the immunostimulatory substance is a polycationic polymer, an immunostimulatory deoxynucleotide (ODN), a peptide containing at least two LysLeuLys motifs, a neuroactive compound, alum, or a Freund's complete or incomplete adjuvant.

51. (New) The pharmaceutical composition of claim 50, wherein the polycationic polymer is a polycationic peptide.

52. (New) The pharmaceutical composition of claim 50, wherein the neuroactive compound is human growth hormone.

53. (New) The pharmaceutical composition of claim 45, further defined as a vaccine.

54. (New) The pharmaceutical composition of claim 53, further defined as a vaccine for treatment and/or prevention of *H. pylori* infection.

55. (New) A method of vaccinating a subject comprising:
obtaining a pharmaceutical composition of claim 45; and
administering the pharmaceutical composition to a subject;
wherein the subject is vaccinated.

56. (New) The method of claim 55, wherein the subject is a human.

57. (New) The method of claim 55, further defined as a method of treating and/or preventing *H. pylori* infection in the subject.

58. (New) The method of claim 55, wherein the hyperimmune serum-reactive antigen or fragment is directed against *H. pylori*.

59. (New) The method of claim 55, wherein the pharmaceutical composition comprises at least two different hyperimmune serum-reactive antigens or fragments thereof.

60. (New) The method of claim 59, wherein the at least two different hyperimmune serum-reactive antigens or fragments thereof are both directed against H. pylori.